

REMARKS

Applicants appreciate the Examiner's review of the present application and respectfully request reconsideration based on the previous amendments and following remarks. Claims 17-46 and 48-52 are pending in the present application.

Objections, and Rejections under 35 U.S.C. 112

The Examiner has objected to Claims 9 and 22-23, and has rejected Claims 6 and 33 under 35 U.S.C. §112 second paragraph. Applicants have corrected the antecedent basis problems and appreciate the Examiner's suggestions for correcting the claims.

Cancelled Claims

Applicants have cancelled Claims 1-16 and 47, without prejudice.

Rejections under 35 U.S.C. 103(a)

The Examiner has rejected Claims 17-23, 25-26 and 37-38 under 35 U.S.C. §103(a) as being obvious by Oh et al. (U.S. Patent No. 6,438,357) in view of Baron (U.S. Patent No. 6,385,739). Applicants traverse this rejection.

The Examiner states that Oh discloses "a controller to control the connected RF device under test" and refers to a control computer 68 and Col. 2 lines 9-12 of Oh. Applicants note the control computer of Oh is not controlling any device under test, instead it is controlling the variable attenuators. See Col. 2 lines 9-12. In other words, the control computer of Oh is used to control the air interface simulator, and has no control over the RF device under test. Applicants have amended Claim 17 to help clarify this, so that the claim recites "an RF device controller, in

communication with said RF device under test, said RF device controller to control said connected RF device under test”.

The Examiner states that Barton discloses an isolation chamber. Applicants note that Barton is not disclosing an RF isolation chamber. Barton makes no mention of RF shielding. For the present invention, RF isolation is mandatory. The RF devices under test transmit at frequencies and strengths that easily penetrate most enclosures and spaces. Indeed, one of the great advantages of the present invention is the ability to isolate such RF devices under test and have complete control over the emulated wireless test environment. The modular design of the present invention allows a completely configurable test environment with as many test modules and RF devices under test to be “placed” in the emulated wireless environment, and then monitor and test how the RF devices perform. But the fundamental requirement is that the RF devices under test must be completely isolate so that all RF transmissions to and from the RF device under test is through the RF connection.

Applicants have amended Claim 17 to clarify that the isolation chamber is an RF isolation chamber (by the way this also fixes the antecedent problem with Claims 22 and 23). Applicants have also amended Claim 17 to help clarify that the test environment enabled by the present invention is an emulated wireless environment.

Accordingly, Applicants assert that Claim 17 and all claims dependent upon it are allowable.

Rejections under 35 U.S.C. 102(b)

The Examiner has rejected Claims 29-30, 33-36, 39-42, and 45-46 under 35 U.S.C. §102(b) as being anticipated by Oh et al. (U.S. Patent No. 6,438,357). Applicants traverse this rejection.

The Examiner states that Oh discloses “virtual client emulators” and refers to Fig. 1 items 62, 64, 66. These are not virtual client emulators, these are mobile stations. See Col. 3 lines 14-15. These are different from the virtual clients of the present invention.

The present invention, as recited in Claim 29, is a test module that can easily emulate any desired amount of traffic in the RF test environment. It is capable of doing this inter alia because of the virtual client emulator, which can emulate a plurality of other wireless devices that are transmitting RF signals onto the RF test environment. This is described in detail in the specification at Page 15 line 28 through Page 16 line 11, and Page 21 lines 13-20. As described in the specification, the virtual client emulator can maintain a state for any number of virtual clients, and add and remove virtual clients as required. A very high traffic environment can be easily created by emulating a large number of virtual clients (thereby increasing collisions and also transmitting delays). Further the number of virtual clients can be changed in real time to test how a device under test handles changes in traffic. A mobile station, as disclosed by Oh, does not have this ability.

Applicants have amended Claim 29 to help clarify that the virtual client emulator emulates a plurality of virtual clients. Accordingly, Applicants assert that Claim 29 and all claims dependent upon it are allowable.

With regard to Claim 31, the Examiner states the Uesugi (U.S. Patent No. 6,510,133) discloses creating data frames that are invalid in accordance with a selected protocol, and refers to Fig. 1 and Col. 1 lines 51-54. Applicants assert that Uesugi does not disclose this. Uesugi at the cited location is describing using null symbols to prevent leakage of unnecessary signal components to outside of the band. These null symbols have nothing to do with invalid data frames. Accordingly Applicants assert that Claim 31 is allowable.

With regard to Claim 32 the Examiner states that the null symbols of Uesugi are also the same as data frames with incorrect checksums. Again, Applicants assert that the null symbols of Uesugi have nothing to do with incorrect checksums, and Claim 32 is allowable.

With regard to Claim 33, the Examiner states that Oh discloses a transmitter at the mobile station transmits a data frame at a time when another device is transmitting data in the test environment (note that mobile stations 62, 64, 66 can transmit/receive data simultaneously). Applicants assert that this description from Oh does not support and argument that Oh discloses this feature. Nonetheless, Applicants have amended Claim 33 to recite that the simultaneous transmission is performed so as to cause a collision. Accordingly Applicants assert that Claim 33 is allowable.

With regard to Claim 39, Applicants have amended Claim 39 in a similar manner to Claim 29, to clarify that the virtual client emulator creates and maintains the plurality of virtual clients, and Applicants assert that Claim 39 and all claims dependent upon are allowable for the same reasons.

With regard to Claim 48, the Examiner states that Oh does not disclose that the wireless device is in an isolation chamber, and cites Barton as an example of an isolation chamber. Applicants respectfully note that Claim 48 recites “an RF isolation chamber”, and as previously presented, Barton provides no description of or need for an RF isolation chamber. As previously described, the present invention is useful for wireless devices that require a very high level of RF isolation in order to be tested in a controlled test environment.

Oh does not disclose any feature of placing the mobile stations in RF isolation chambers. Apparently Oh does not have a need to address this problem. A possibility is that by having separate delta modulation converters (items 56, 58, and 60, see Fig. 1 and Col. 3 lines 49-52), Oh does not have a problem with mobile stations 62-66 receiving RF transmissions through the air

instead of through the connected paths. But in any case, Oh does not disclose this feature, and Barton does not either.

The present invention is able to work with wireless devices that transmit at frequencies and signal strengths that easily penetrate most enclosures and spaces. By providing the very high level of RF isolation with RF isolation chambers, and using shielded RF paths, the present invention provides the ability to accurately test the roaming feature of such wireless devices. Accordingly, Applicants assert that Claim 48 and all claims dependent on it are allowable.

Applicants assert that none of the cited references, alone or in combination disclose the features of the Claims, and therefore all pending claims are allowable.

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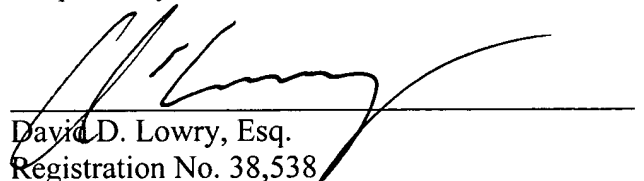
Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such action is hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to contact the undersigned at the telephone number listed below.

In the event any extensions of time for responding are required for the pending application(s), please treat this paper as a petition to extend the time as required and charge Deposit Account No. 50-0369 therefore.

Respectfully submitted,

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